



Table 1. Specifications of Basic Types of Tank Cars on USSR Railroads

| Type of Car                                                                                                                | Frame Length(mm) |                             | Tank Dimensions(mm) |                      | Capacity<br>(tons) | Light<br>Weight<br>(tons) | Axle<br>Load<br>(tons) | Tare<br>Coeffi-<br>cient | Height<br>Above<br>Rail<br>(mm) | Extreme<br>Width<br>(mm) |
|----------------------------------------------------------------------------------------------------------------------------|------------------|-----------------------------|---------------------|----------------------|--------------------|---------------------------|------------------------|--------------------------|---------------------------------|--------------------------|
|                                                                                                                            | Over<br>Buffers  | Between<br>Truck<br>Centers | External<br>Length  | Internal<br>Diameter |                    |                           |                        |                          |                                 |                          |
| 1. Two axle,<br>Russian State<br>Railways, with-<br>out hand brake                                                         | 6,444            | 3,810                       | 6,274               | 1,748                | 15.2               | 7.5                       | 11.5                   | .49                      | --                              | --                       |
| 2. Same as above,<br>with hand brake                                                                                       | 6,444            | 3,810                       | 6,274               | 1,748                | 15.9               | 8.1                       | 11.8                   | .52                      | --                              | --                       |
| 3. Four axle, for-<br>mer North Cau-<br>casus RR, 30 cu m<br>capacity                                                      | 11,500           | 8,000                       | 11,426              | 1,602                | 30                 | 13.6                      | 10.9                   | .45                      | --                              | --                       |
| 4. Four axle,<br>riveted and<br>welded con-<br>struction, with-<br>out hand brake,<br>50 cu m capacity,<br>built 1927-1941 | 10,800           | 7,120                       | 9,600               | 2,600                | 50                 | 21.8-24.0                 | 18.5                   | .44-.48                  | --                              | --                       |
| 5. Same as above,<br>with hand brake                                                                                       | 11,000           | 7,120                       | 9,600               | 2,600                | 50                 | 22.5-24.7                 | 18.65                  | .45-.49                  | --                              | --                       |
| 6. Two axle, with-<br>out hand brake,<br>25 cu m capacity,<br>built 1931-1937                                              | 7,560            | 3,900                       | 6,740               | 2,200                | 25                 | 11.0                      | 18                     | .44                      | --                              | --                       |

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|-------------------------------------------------------------------------------------------------------------|--------|-------|-------------------------|------------------------|----|------|-------|-----|-------|-------|
| 7. Same as above,<br>with hand brake                                                                        | 7,740  | 3,500 | 6,740                   | 2,200                  | 25 | 11.7 | 16.35 | .47 | --    | --    |
| 8. Four axle, for<br>bitumen, 50 cu m<br>capacity                                                           | 10,000 | 7,000 | $\frac{9,600*}{10,200}$ | $\frac{2,600*}{2,900}$ | 50 | 25   | 18.75 | .50 | --    | --    |
| 9. Two axle, for<br>bitumen, 25<br>cu m capacity                                                            | 7,500  | 3,000 | $\frac{6,740*}{7,310}$  | $\frac{2,100*}{2,552}$ | 25 | 13.5 | 19.25 | .54 | --    | --    |
| 10. Four axle, for<br>sulfuric and<br>nitric acid<br>mixture and<br>sulfuric acid,<br>without hand<br>brake | 10,000 | 7,120 | 9,000                   | 1,090                  | 50 | 23   | 18.25 | .46 | 4,400 | 2,912 |
| 11. Same as above,<br>with hand brake                                                                       | 11,000 | 7,120 | 9,600                   | 1,890                  | 50 | 23.7 | 18.4  | .47 | --    | --    |
| 12. Four axle, for<br>fuming sulfuric<br>acid, 26 cu m<br>capacity, with-<br>out hand brake                 | 10,800 | 7,120 | $\frac{9,600*}{10,000}$ | $\frac{1,890*}{2,290}$ | 50 | 24   | 18.5  | .48 | --    | --    |
| 13. Same as above,<br>with hand brake                                                                       | 11,200 | 7,120 | $\frac{9,600*}{10,000}$ | $\frac{1,890*}{2,290}$ | 50 | 24.7 | 18.7  | .49 | --    | --    |
| 14. Four axle, for<br>ammonia, 50 cu m<br>capacity                                                          | 11,000 | 7,000 | $\frac{9,600*}{9,900}$  | $\frac{2,600*}{2,900}$ | 50 | 25   | 18.75 | .50 | --    | --    |

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|-------------------------------------------------------------------------------|--------|-------|-------------------------|-------------------------|----|------|-------|-----|-------|-------|
| 15. Two axle, for ammonia, 25 cu m capacity                                   | 7,740  | 3,900 | $\frac{6,740^*}{7,040}$ | $\frac{2,200^*}{2,512}$ | 25 | 13.5 | 19.25 | .54 | --    | --    |
| 16. Four axle, contemporary construction without hand brake, 50 cu m capacity | 10,600 | 7,120 | 9,500                   | 2,600                   | 50 | 25   | 18.75 | .50 | 4,615 | 3,020 |
| 17. Same as above, with hand brake                                            | 11,000 | 7,120 | 9,600                   | 2,600                   | 50 | 25.7 | 18.93 | .51 | 4,615 | 3,020 |
| 18. Two axle, 25 cu m capacity, built 1945-1948, without hand brake           | 7,900  | 4,200 | 6,640                   | 2,200                   | 25 | 13.5 | 19.25 | .54 | --    | --    |
| 19. Four axle, for hydrochloric acid                                          | 10,600 | 7,120 | 9,520                   | 2,300                   | -- | --   | --    | --  | 4,562 | 2,910 |

\* The fractions apply to insulated tank cars; the numerators indicate length without insulation and internal diameter, the denominators indicate external length and external diameter

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TABLE 2. SPECIFICATIONS OF BASIC TYPES OF FREIGHT CARS ON USSR RAILROADS

| TYPE OF CAR                                          | LIGHT<br>WEIGHT<br>(TONS) | CAPAC-<br>ITY<br>(TONS) | TARE<br>COEFFI-<br>CIENT | CUBIC<br>CAPAC-<br>ITY<br>(CU M) | LENGTH<br>OF<br>FRAME<br>(M) | LOAD<br>ON ONE<br>METER OF<br>TRACK<br>(TONS) | AXLE<br>LOAD<br>(TONS) | EXTREME<br>WIDTH<br>(MM) | HEIGHT<br>ABOVE<br>RAIL<br>(MM) | INSIDE<br>LENGTH<br>(MM) | INSIDE<br>HEIGHT<br>(MM) | INSIDE<br>WIDTH<br>(MM) | LENGTH<br>OVER<br>BUFFERS<br>(MM) | LENGTH<br>BETWEEN<br>TRUCK<br>CENTERS<br>(MM) | YEAR<br>BUILT |
|------------------------------------------------------|---------------------------|-------------------------|--------------------------|----------------------------------|------------------------------|-----------------------------------------------|------------------------|--------------------------|---------------------------------|--------------------------|--------------------------|-------------------------|-----------------------------------|-----------------------------------------------|---------------|
| 1. TWO AXLE, BOX,<br>WITHOUT HAND<br>BRAKE           | 8.3                       | 16.5-<br>18             | .5-<br>.46               | 39                               | 6.444                        | 2.43                                          | 13.10                  | --                       | --                              | --                       | --                       | --                      | --                                | --                                            | --            |
| 2. TWO AXLE, BOX,<br>WITH HAND BRAKE                 | 8.6                       | 16.5-<br>18             | .5-<br>.40               | 39                               | 6.444                        | 2.43                                          | 13.30                  | --                       | --                              | --                       | --                       | --                      | --                                | --                                            | --            |
| 3. TWO AXLE, BOX,<br>WITHOUT HAND<br>BRAKE           | 11.4                      | 20                      | .57                      | 45.4                             | 6.43                         | 3.96                                          | 15.65                  | --                       | --                              | --                       | --                       | --                      | --                                | --                                            | 1923          |
| 4. TWO AXLE, BOX,<br>WITH HAND BRAKE                 | 12.13                     | 20                      | .51                      | 45.4                             | 7.37                         | 3.74                                          | 16.05                  | --                       | --                              | --                       | --                       | --                      | --                                | --                                            | 1923          |
| 5. FOUR AXLE, BOX,<br>RIVETED, WITHOUT<br>HAND BRAKE | 23.3                      | 50                      | .47                      | 89.4                             | 13.02                        | 5.13                                          | 13.35                  | --                       | --                              | 2,500                    | --                       | --                      | --                                | --                                            | 1926          |
| 6. FOUR AXLE, BOX,<br>RIVETED, WITH<br>HAND BRAKE    | 24.2                      | 50                      | .485                     | 89.4                             | 13.638                       | 4.93                                          | 13.55                  | --                       | --                              | 2,500                    | --                       | --                      | --                                | --                                            | 1926          |
| 7. FOUR AXLE, BOX,<br>WELDED, WITHOUT<br>HAND BRAKE  | 21.9                      | 50                      | .44                      | 89.4                             | 13.51                        | 4.88                                          | 13.0                   | --                       | --                              | 13,390                   | 2,360                    | --                      | 16,300                            | 9,830                                         | 1926          |
| 8. FOUR AXLE, BOX,<br>WELDED, WITH<br>HAND BRAKE     | 22.7                      | 50                      | .456                     | 89.0                             | 14.13                        | 4.71                                          | 13.18                  | --                       | --                              | 13,320                   | 2,360                    | --                      | 16,300                            | 9,830                                         | 1926          |
| 9. TWO AXLE, GONDOLA,<br>WITHOUT HAND<br>BRAKE       | 7.16                      | 16.5-<br>18             | .43-<br>.40              | 21.9                             | 6.444                        | 3.3                                           | 12.58                  | --                       | --                              | --                       | --                       | --                      | --                                | --                                            | --            |

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| 10. FOUR AXLE, CONDOLA, WELDED, WOOD SIDES, WITH AND WITHOUT HAND BRAKE     | 22.7 | 69.1    | .38     | 66.5           | 12.70 | 5.94  | 20.57 | 3.210 | 3,270 | -- | 1,000 | 2,570 | 13,890 | 8,650 | 1932 |
| 11. FOUR AXLE, CONDOLA, WELDED, METAL SIDES, WITHOUT HAND BRAKE             | 24   | 53      | .415    | 66.8           | 12.7  | 5.83  | 20.5  | --    | --    | -- | --    | --    | --     | --    | 1947 |
| 12. TWO AXLE, HOPPER, WITH HAND BRAKE                                       | 12.0 | 25      | .49     | 26.0           | 5.92  | 5.21  | 18.6  | --    | --    | -- | --    | --    | --     | --    | 1931 |
| 13. FOUR AXLE, COAL HOPPER, WELDED AND RIVETED, WITH AND WITHOUT HAND BRAKE | 17.1 | 70      | .42     | 59.1           | 6.11  | 7.00  | 17.75 | 3.250 | 3,400 | -- | --    | --    | 12,400 | 7,700 | 1938 |
| 14. FOUR AXLE, COAL HOPPER, WELDED AND RIVETED, WITH AND WITHOUT HAND BRAKE | 17.1 | 70      | .425    | 59.6           | 6.192 | 11.05 | 21.78 | 3.250 | 3,400 | -- | --    | --    | 12,400 | 7,700 | 1933 |
| 15. TWO AXLE, FLAT, WITHOUT HAND BRAKE                                      | 7.3  | 16.5-18 | .44-.4  | 5.71*<br>12.00 | 2.204 | 2.43  | 12.65 | --    | --    | -- | --    | --    | --     | --    | --   |
| 16. TWO AXLE, FLAT, WITH HAND BRAKE                                         | 7.8  | 16.5-18 | .47-.43 | 5.43*<br>12.10 | 9.204 | 2.48  | 12.9  | --    | --    | -- | --    | --    | --     | --    | --   |
| 17. TWO AXLE, FLAT, HIGH SIDE, WELDED AND RIVETED, WITHOUT HAND BRAKE       | 9.2  | 20      | .46     | 14.61          | 9.204 | 2.8   | 14.6  | --    | --    | -- | --    | --    | --     | --    | --   |
| 18. SAME AS ABOVE, WITH HAND BRAKE                                          | 9.9  | 20      | .5      | 13.84          | 9.204 | 2.87  | 14.95 | --    | --    | -- | --    | --    | --     | --    | --   |

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| 19. TWO AXLE, HIGH<br>SIDE, FLAT, WELD-<br>ED, FOR MANGANESE,<br>WITHOUT HAND BRAKE | 8.9  | 20 | .445 | 9.8                                | 6.61               | 3.69 | 14.45 | -- | -- | -- | -- | -- | -- | --   | -- |
| 20. SAME AS ABOVE,<br>WITH HAND<br>BRAKE                                            | 9.4  | 20 | .47  | 9.8                                | 6.61               | 3.75 | 14.70 | -- | -- | -- | -- | -- | -- | --   | -- |
| 21. FOUR AXLE, FLAT,<br>WELDED, WITH<br>AND WITHOUT<br>HAND BRAKE                   | 18.4 | 50 | .37  | 15.73                              | 13.00 <sup>4</sup> | 4.21 | 17.1  | -- | -- | -- | -- | -- | -- | 1932 |    |
| 22. FOUR AXLE, FLAT,<br>NO SIDES, WITH-<br>OUT HAND BRAKE                           | 14   | 60 | .4   | FLOOR<br>SPACE<br>NO. 3<br>SQ. FT. | 13                 | 5.51 | 21.   | -- | -- | -- | -- | -- | -- | 1935 |    |
| 23. FOUR AXLE, FLAT,<br>WELDED, ROLL-<br>ED METAL BEAMS,<br>WITHOUT HAND<br>BRAKE   | 22   | 60 | .368 | 15.73                              | 12.97 <sup>4</sup> | 5.78 | 20.5  | -- | -- | -- | -- | -- | -- | 1936 |    |
| 24. SAME AS ABOVE,<br>WITH HAND<br>BRAKE                                            | 22.2 | 60 | .37  | 15.0                               | 12.97 <sup>4</sup> | 5.79 | 20.55 | -- | -- | -- | -- | -- | -- | 1936 |    |

\* THE NUMERATORS INDICATE CUBIC CAPACITY WITH SIDES 229 MILLIMETERS HIGH AND THE DENOMINATORS INDICATE CUBIC CAPACITY WITH SIDES 550 MILLIMETERS HIGH.

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